

The Impact of Service-Learning-Type Experiences on Preservice Teachers' Integration of Principles of Educational Psychology

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In this study, members ($n = 48$) of 2 sections of a required educational psychology course conducted 3 service-learning-type field experiences and wrote reflections on the experiences in relationship to the theories and principles addressed in the course. Participants also described their vision for teaching at the beginning and the end of the semester (e.g., How would you define the teacher's role in promoting students' learning? What aspects of students and teachers affect a teacher's success in this role?) Student work was analyzed to explore the degree to which they integrated the principles addressed in the course (regarding the learner and learning) into their understanding of classroom practices and their vision for teaching. Results suggest that service-learning-type experiences were conducive to a preservice teacher's ability to examine their preconceived notions, understand and skillfully use course knowledge, and develop a vision for teaching that is shaped by educational psychology.

Learning to teach effectively in contemporary American schools is a formidable challenge exacerbated by a rapidly expanding knowledge base, the considerable and growing diversity of today's school populations, and an educational culture driven by standardization. The work of teacher educators attempting to provide preservice teachers with experiences designed to develop the skill and fortitude needed to navigate these demands is correspondingly difficult (Duffy, 2002; Shulman, 2004). In particular, the task of transferring the knowledge learned in coursework to the day-to-day practice of teaching presents a universal challenge (Anderson, Barksdale, & Hite, 2005; McIntyre & Byrd, 1996). After a short time in the field, preservice teachers often revert to "one-size-fits-all" recipes (Pajares & Graham, 1998, p. 855) or "folkways" learned from their own educational experiences (Lortie, 1975), or become engrossed in procedural concerns or routine tasks (McBee, 1998). As a result,

they often abandon the insights learned in their education courses in favor of familiar, traditional, school practices (Korthagen & Kessels, 1999; Zeichner & Gore, 1990). Of specific concern is the fact that preservice teachers typically approach the classroom with a lack of critical insight into the nature of the learner (i.e., students and student development) and learning (i.e., learning theory, assessment of learning; Borko & Putnam, 1996; Kagan, 1992).

Coursework in educational psychology offers crucial insights into these vital areas of teacher knowledge (student development, diversity, motivation, assessment, learning theory, etc.). Unfortunately, as is the case with educational coursework in general, the knowledge base from such courses is useless without effective translation from theory to practice. In order for preservice teachers to develop the agency required to resist more traditional or technical approaches to teaching and apply insights from educational psychology instead, a more effective

way of integrating insights from coursework with practice is clearly needed.

Both the theory of situated learning (Lave & Wenger, 1991) and practice/activity theory (Holland, Skinner, Lachicotte, & Cain, 1998) suggest that the skill and agency necessary to teach reflectively and adaptively can only be learned through participation in a community of practice. That is, the way individuals come to understand and shape their participation in a particular context (e.g., how teachers come to understand and enact their work in a school setting) is continually negotiated and produced amid the daily practices, encounters, and discourses available to them within their context (McDermott, 1997; Wortham, 2004). Bolye-Baise et al. (2007) suggest that community- or school-based experiences such as service-learning and reflection offer the ideal opportunity for future teachers to learn to recognize the forces that impact students and their learning in ways that can meaningfully shape and inform their teaching practices. In this study, we describe our attempt to integrate service-learning-style field experiences and reflection into a required, one-semester, educational psychology course, and explore the degree to which preservice teachers integrated the principles addressed in the course (regarding the learner and learning) into their understanding of classroom practices and their vision for teaching (i.e., their personal identity as a teacher) during the semester.

The Challenge of Teaching Educational Psychology

Educational psychology courses are designed to provide an understanding

of the psychological underpinnings of education, offering a knowledge base that can imbue teachers with insights into the cultural, contextual, intra- and interpersonal processes that impact their students' experience of learning. This knowledge base is useless, however, without effective translation from theory to practice. Learning to teach requires becoming an adaptive teacher in light of the principles of educational psychology and the particularities of a given context.

Berliner's widely accepted, five-level model (1988) serves as a useful model for considering the development of such teacher knowledge. According to this theory, teachers begin at the novice stage, in which teacher knowledge is primarily context-free, declarative knowledge. From this, teachers progress through more advanced stages (advanced beginner, competent, proficient) in which teachers are increasingly able to pick up on and interpret cues from the context and make applications or conscious choices about their behavior (i.e., various uses of knowledge). Eventually, it is hoped that teachers will reach the expert stage, which is marked by an intuitive grasp of situations and fluid, seemingly effortless, self-regulated handling of instructional situations. Such expert teachers possess a resourcefulness that guides them to adjust, revise, invent, modify, and maintain their sense of direction as a teacher, in the midst of the diverse context within which they find themselves and the pressures they face (Duffy, 2002; Morrow, Tracey, Woo, & Pressley, 1999; Pressley, Rankin & Yokoi, 1996; Wharton-McDonald, Pressley & Hampston, 1998).

Duffy (2002) has described the innovation and responsiveness of expert levels of teaching as "thoughtful adaptation," arguing that the ability of

some teachers to maintain their bearings, resourcefulness, and momentum—while many around them do not—is dependent on their “vision” of teaching. By vision, he means a personal definition of what it means to be a teacher—which fuels and energizes creative and independent thinking. He argues that the professional mindfulness necessary to craft such a vision has to be based within a teacher’s reflective examination and understanding of their own personally held values and beliefs about education. Similarly, Levin and He (2008) argue that a highly reflective process known as “personal theorizing” (Cornet, Yeotis, & Terwilliger, 1990) allows teachers to identify their personal practical theories (a systematic set of beliefs about teaching) that guide teachers’ actions. However, such high levels of reflection and thoughtfully adaptive applications can be difficult to cultivate in teacher education courses consumed with the learning of knowledge and skills (Fairbanks, 2010). In order to begin to advance through higher-level stages of teacher development, novice teachers or teacher candidates need to acquire extended knowledge of their pupils (their cultures, interests, aptitudes, challenges, inter- and intrapersonal influences), as well as extended knowledge of the practical applications of that information (learning theory, motivation, etc.) that can emerge from the knowledge of educational psychology. However, coursework alone cannot necessarily provide the internalization of the knowledge required for such insights. Cognitive theories of learning suggest that such complex learning occurs not by just recording information (as in traditional coursework) but through interpreting it (Resnick, 1989). That is, learning—

including learning to apply educational psychology—is a constructive process in which the individual develops the ability to interpret events on the basis of their knowledge, beliefs, and dispositions. From this perspective, learning insights from educational psychology is less a matter of presenting knowledge than of creating environments that support learners’ efforts to construct meaning. Accordingly, novices need the kinds of reflective experiences that allow them to step back from naïve theories and beliefs or traditional models long enough to perceive the reality of their students as learners and of the learning process within the context in which they occur.

Current theories of learning, influenced by situated perspectives, sociocultural theory, as well as the fields of anthropology, psychology, and sociology, seldom consider learning apart from such contextualized features (Bruner, 1990; Gardner, 1985). Correspondingly, teacher educators have moved toward models of learning that situate learning about teaching in the setting in which it will be used (Borko & Putnam, 1996) by grounding teacher education in educational practice. This is designed to support teacher candidates’ attempts to construct meaning through learning experiences that are situated in meaningful contexts. Teacher education programs, therefore, often consist of two components designed to guide the development of prospective teachers. One involves university-based courses (such as courses in educational psychology) in which a great deal of the knowledge of the science of teaching is constructed; the other comprises various practical experiences that allow students to apply and interpret that knowledge base by means of practice (Britzman, 1991; Brickhouse & Bodner, 1992;

McIntyre et al., 1996). In order for students to specifically acquire useful knowledge of learners and learning (the focus of educational psychology), direct experience in extended opportunities to interact with and study students is clearly called for (Kagan, 1992). Unfortunately, not only does coursework in educational psychology often occur in isolation from the practical educational experiences of students, teacher education programs in general often struggle to find the optimal combination of these experiences and frequently fail to strongly influence the practices of their graduates (Zeichner & Tabachnick, 1981); many principles and educational concepts learned during teacher education are “washed out” during field experiences. This phenomenon has been referred to as “transition shock,” in which teachers experience a shift during their first encounter with teaching, moving toward the current practices at their schools or their previously held beliefs about teaching (Ball, 1989; McDiarmid & Price, 1990), rather than toward scientific insights learned from coursework such as educational psychology (Korthagen & Lagerwerf, 1996; Tom, 1997). Given the hard realities of teaching, identifying the optimal teacher learning experiences to prevent such regression is crucial.

Situated Strategies for Teaching Educational Psychology

Support for the task of embedding insights from educational psychology more effectively in practice can be gained by examining theoretical approaches that focus on how learning is situated. Lave and Wenger’s theory of situated learning (1991), built on the idea of cognitive apprenticeships, involves participation in a community of

practice in order to make sense of theory, knowledge, and beliefs in light of the particularities of distinct contexts. From this perspective, learning to teach doesn’t mean merely acquiring new knowledge or abilities to perform specified tasks. Rather, learning means becoming an adaptive, flexible, resilient person in light of the particularities of the community of practice within which teachers find themselves. Moreover, Lave and Wenger explicitly distinguish meaningful participation in a setting from pure observation. The concept of “legitimate participation” suggests that if teacher candidates are offered the opportunity to participate as legitimate members of a learning community that includes access to genuine responsibilities, they will come to see themselves as legitimate contributors to that process and act on that identity (applying their knowledge in flexible and independent ways as required by the context). It is within this negotiation that we see the seeds of a thoughtful and resilient teaching repertoire. According to the theory of situated learning, the vital link between field observation and productive development is the act of critical reflection—active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it (see also Dewey, 1933).

Holland et al.’s (1998) social practice/activity theory of identity development similarly argues that because the developing self is constantly embedded in social practice, people do not merely live out the knowledge they have accumulated, but rather, they “author” themselves, developing a “self-in-practice” within the various “sites” they inhabit. Such practice and improvisation allow individuals to

develop a sense of identification within a socially and culturally constructed world, which supports the development of a sense of agency, or the power to act purposefully and reflectively (Inden, 1990). Such agency is therefore collectively produced and learned in practice. What remains is to identify the impact of such situated experiences on the internalization of a teacher's knowledge base in educational psychology, and the optimal design of such experiences for teacher candidates.

According to these theoretical lenses, systematically reflective and intensely contextually attentive field experiences may allow the preservice teachers' images of teaching to become more clearly identified and critically examined (Kennedy, 2006). Active reflection on such experiences is also seen as an important means of resolving conflicts between theory and practice. Indeed, programs in which preservice teachers successfully transfer what is learned in coursework to practice typically involve such rigorous integration of theory, practice, and reflection (Korthagen & Kessels, 1999). Tobin's (1993) research on teacher beliefs and values (as opposed to teacher knowledge alone) suggests that teacher learning is best accomplished by direct experience in educational settings in conjunction with opportunities for such critical reflection on the experience.

A growing body of research suggests that service-learning-type experiences may be an ideal way to situate teacher education, in order to foster such reflection, agency, and insight (Yates & Youniss, 1996). Explaining that there is only so much you can teach about such real-life issues in a university classroom, Boyle-Baise et al. (2007) suggest that community-

based, service-learning-style activities—including the intense critical reflection that is central to service-learning (LSA, 2007)—provide the optimal and natural venue through which preservice teachers can glimpse their students' culture, life experiences, needs, resilience, and diverse identities. This allows teachers to observe and consider the psychological dimensions of students' lives that may powerfully shape their engagement in learning. In a recent study, Baldwin, Buchanan, and Rudisill (2007) reported powerful results of service learning on preservice teachers, including insights regarding teaching, development of personal perspectives about teaching, and defusing previously held deficit views of students (see also Korthagen & Kessels, 1999; Tobin, 1993). In an ongoing study of the impact of service learning on teacher vision (Faircloth, He, Higgins 2009), a clear link between student experiences with service-learning-type experiences and thoughtfully adaptive and activist visions of education is emerging as well. Considering teacher education through this lens appears very promising. However, greater insight into the precise impact and, more specifically, the optimal design of service learning to skilled understanding and application of educational psychology is essential.

The current study therefore explores the development of preservice teachers' application and integration of the knowledge and principles of educational psychology in service-learning-type field experiences. The general research question for this study was: "What is the impact of service-learning-type field experiences on preservice teachers' integration of the principles of educational psychology?"

Four specific research questions were addressed:

1. How do preservice teachers integrate educational psychology theories into their understanding of teaching practices during service-learning-type field experiences?
2. What do preservice teachers report is the impact of such field experiences on their understanding of educational psychology theories?
3. How do preservice teachers integrate educational psychology theories into their vision or identity as a teacher (their definition of what it means to teach) during service-learning-type field experiences?
4. What do preservice teachers report is the impact of such field experiences on the development of their vision of teaching?

Method

Participants

Participants for this study were 48 volunteers from among the 62 class members in two sections of a one-semester educational psychology course. The course is required for secondary preservice teachers majoring in various content areas including: English, history, social studies, math, science, music, art and physical education, during their junior or senior year. At the beginning of the class, participant background information regarding their gender, age, school contexts in which they had their learning experiences, and where they

would like to teach for their career (rural, suburban, or urban) was collected. As is indicated in Table 1, most participants were female, traditional college students (18 to 23 years old), and had their own K-12 experiences in rural or suburban school settings (80%). The profile of this group of participants did not differ from the overall makeup of the class in age, gender, ethnicity, or course grade.

Table 1. *Participant Description*

Description	Number of participants (%)
Gender	
Male	13 (29%)
Female	32 (71%)
Age	
18-23	37 (82%)
24-29	5 (11%)
30 or above	3 (7%)
K-12 Learning Contexts*	
Rural	16 (36%)
Suburban	26 (58%)
Urban	19 (20%)
Desired School Contexts of Teaching*	
Rural	14 (31%)
Suburban	25 (56%)
Urban	18 (40%)

Note. The total number does not add up to 45 or 100% due to participants' multiple selections.

Procedure

In both sections of this educational psychology course, all class members were required to conduct three field experiences as part of the course requirements. Although students were taught about, and encouraged to engage in, "service learning" activities for their field experiences, most of them did not follow the core tenets of service learning (Yates & Youniss, 1996). Many did engage in participatory experiences as opposed to pure observation (this distinction was important to the goals of the study). However few engaged in genuine service learning. For this reason, a post hoc comparison of the integration of the principles of educational psychology between students who participated in field experiences patterned after service learning (participatory in nature, responding to community identified needs, reflecting on the experience...) and those whose practice mimicked the pure observation typical of traditional field experiences, was included in the analyses for this study (see Results section). Students could conduct their field experiences at local school or community settings and were required to take field notes describing their field experiences, reflect on their experiences in relationship to the theories and principles they learned in the class, and write a summary of their reflection. The reflections were due at three different points during the semester, one before midterm, one at midterm and one after midterm. See Appendix A for complete Field Experience Assignment Guidelines; in general, students were instructed as follows:

All class members are required to participate in three field experiences during which you will explore, analyze,

and evaluate the principles of educational psychology in practice. Each field experience should include at least one hour of on-site participation. All class members are asked to insure that at least one setting is a cultural setting with which you are unfamiliar (highly impacted, diverse, private school...). Your goal is to identify, reflect on, and assess psychological principles in action in the three settings in which you participate. For each of the settings you visit, you must write field notes, reflect on your experience and your notes in light of the theories and research we have been addressing in the course, and write a three- to four- page reflection describing the psychological issues at work in the setting. Your reflection should include:

- 1) a thorough description of the setting and your involvement at the site
- 2) your personal response to the experience (details that stood out to you, concrete examples, insights you gained)
- 3) educational implications of educational psychology in the setting (what principles from educational psychology did you observe, how could educational psychology inform the practices in this setting...)?

One early class session included instruction and practice in taking field notes, using a videotaped lesson.

Class members also described their vision for teaching at the beginning and the end of the semester in an online reflection format. Specifically, they addressed the following questions: "How would you define the teacher's role in promoting students' learning? What aspects of students and teachers affect a teacher's success in this role? What characteristics, experiences, etc. determine the students' success? Please explain your reasoning."

Analysis

All three reflections completed by each of the 48 participants were analyzed for insights into their recognition and use of the principles of educational psychology as well as their reports regarding the impact of their field experiences on their understanding and use of such principles; quotations were extracted from reflections and vision statements that substantiated these themes. Evidence was sought across participants of points of convergence as well as diverse views with respect to the issues raised in this study. Through constant comparative analysis of student work by the three researchers, themes and patterns were identified and agreed upon (Glaser & Strauss, 1967). Ten reflections were selected at random to be reviewed and coded by all three researchers; comparison indicated nearly uniform ratings across all 10 reflections. Once codes were established, reflections were categorized into one of four levels based on Berliner's (1988) model of teacher development shown in table 2.

Preknowledge. At the first level, reflections were mainly descriptive in nature, including observations of and personal reactions to classroom layout, teaching strategies or lesson content, and the interactions between students and teachers. Although this type of reflection occasionally included mention of topics drawn from educational psychology, no deliberate connections were made between these descriptions and theory or application of educational psychology, or visions for teaching. For example, although a comment such as "Working with musical instruments allows student to develop better coordination and self-confidence" mentions physical development and self-efficacy, there is no evidence of the students'

understanding of those concepts or well-developed connections made between their observations and the theories. Reflections characterized predominantly by such comments would therefore be interpreted as being at the preknowledge level.

Table 2. *Teacher Reflection Level Codes*

Level	Description	Example
1	Preknowledge	"Working with musical instruments allows student to develop better coordination and self-confidence."
2	Declarative knowledge	"At this age, students are in between Piaget's concrete operations stage and the formal operations stage, meaning that they are occasionally able to understand abstract concepts, but their thinking is still often concrete."
3	Use of Knowledge (application, warranting, critique, & creativity)	"Assessing students' knowledge in an unorganized/haphazard manner [as observed in field experience] would be an inaccurate way to discover what the students have learned." (critique)
4	Integration of knowledge into individual belief systems	a. increased integration of educational psychology knowledge in field experience reflections across the semester b. development of participants' vision of teaching to reflect insights from educational psychology from the beginning of the semester to the end

Declarative knowledge (recognition/definition). At the declarative (recognition/definition) level, students were able to draw clear parallels between their observations and specific theories and concepts from educational psychology. For example, a student might state, “At this age, students are in between Piaget’s concrete operations stage and the formal operations stage, meaning that they are occasionally able to understand abstract concepts, but their thinking is still often concrete.” Although students at this level recognized evidence of—and accurately defined—theories, they rarely extended their comments to further application, interpretation, or evaluation; nor did they address their own vision or beliefs about teaching, indicating that their level of development was declarative with regard to knowledge, rather than using knowledge productively.

Use of knowledge (application, warranting, critique, and creativity). At this level, students’ reflections employed knowledge in a variety of ways, ranging from analyzing theoretical perspectives, using theory and research to critique educational practices, suggesting innovative applications of theory, and warranting or justifying their positions. Such use of knowledge (as opposed to simple recognition) reflects the more advanced stages of Berliner’s (1988) model of teacher development (advanced beginner; competent; proficient) in which teachers are increasingly able to pick up on and interpret cues from the context and make applications or conscious, thoughtful choices about teacher behavior. The ability to insightfully interpret principles of educational psychology also allowed students to critique the effectiveness of the teaching strategies they observed

using theory as their frame of reference or to recognize misapplications of educational psychology. For example, participants might critique the assessment strategies they observe, suggesting that, “Assessing students’ knowledge in such an unorganized/haphazard manner would be an inaccurate way to discover what the students have learned.” Many participants also used educational psychology theory and research to justify or warrant their position or to suggest original, creative, or innovative strategies or solutions.

Integration of knowledge into individual belief systems. The highest level of teacher knowledge according to Berliner’s (1988) model involves integration of knowledge into teachers’ belief systems regarding teaching (often referred to as teacher vision, Duffy, 2002). For the purposes of this study, such integration was identified in one of four ways. The first was increased evidence of educational psychology knowledge integrated into participants’ reflections across the semester. That is, when a student’s level of teacher knowledge was analyzed across their three reflections, the proportion of comments at the lower levels decreased, while the proportion of upper-level comments increased, indicating a pattern of more frequent and skillful use of the principles of educational psychology. The second evidence of such integration were students’ claims regarding their increasing understanding of educational psychology. The third evidence included more insights from educational psychology reflected in students’ visions of teaching (as reported in course online reflections) at the end of the semester compared to their initial vision statement. For example, a participant’s

teaching visions might move from being teacher-centered to being more student-centered or culturally sensitive across the semester. The fourth evidence involved students' claims regarding integrating more insights from educational psychology into their teaching vision.

Results

The majority of the participants in this study conducted observations (66%) or participant observations (where they not only observed the sessions, but were also responsible for providing tutoring, partnering with an individual with special needs, or other services; 33%). Although not full-fledged service-learning activities, participant observation was referred to as service-learning-style activities based on their participatory nature, their integration in school or community settings where community members had determined the desired student involvement, and the subsequent reflections (each being core tenets of service learning). Most field experiences took place in local school classrooms (64%), tutoring sessions at libraries, nonprofit organizations or community centers (26%), and churches (10%) and lasted from one to two hours. Based on participants' reports, the focus of their reflection tended to include: observations of the setting, student diversity, interactions, and classroom management or instructional strategies. Out of the 48 participants, 16 conducted actual participant-observation (service-learning-style) activities for the majority (two or three out of three) of the assigned experiences; 32 conducted observations (contrary to assignment requirements) for the majority (two or three out of the required three) of their experiences.

Integration of Educational Psychology Principles

Preknowledge. Preknowledge reflections by these participants were descriptive in nature, addressing issues such as classroom set up and layout, the teaching strategies or lesson content, specific classroom scenarios, and the interactions between students and teachers, with no deliberate connections made between these descriptions and theory, application, or participants' teaching vision. For example, one music-education major explained:

"First of all, there is the social aspect of learning, allowing children to be around others their own age...Plus, it is fun [motivating] for the kids. It was neat to see especially the young [children] so engaged in what the program instructor was saying and doing. Music is such a neat way to incorporate learning and as I said before, it helped so much with the order and classroom management."

Although concepts related to student social development, motivation, and classroom management were mentioned in this statement, this reflection was interpreted as being at the preknowledge stage due to the absence of clear or direct connections between their observations and theoretical knowledge of educational psychology.

Declarative knowledge.

Reflections classified in the declarative knowledge phase recognized and explained how educational psychology concepts related to what was seen in the classroom, or used observations to explicate theory. For example, one students reported, "According to Erickson's eight stages of psychosocial development, these kindergartners are

moving into the industry versus inferiority stage from the initiative versus guilt stage." Another observed:

"[The classroom teacher] said that the more pollution we have in the air, the prettier the sunrise and sunset are. The students commented that this was weird. The ability that some students had to realize the irony of pollution making something prettier shows that they are able to make abstract connections (Piaget's Formal Operations Stage)."

and

"The physical arrangement of this classroom facilitated interactions between the students, and teacher to students" in comparison to the previous "preknowledge" examples (that were pure descriptions devoid of added insights).

The following example also demonstrates how participants more thoroughly explored an educational psychology concept in the classroom setting:

"Ormrod (2008) states that one's teaching style should resemble that of an authoritative parent. Fostering an open and welcoming learning environment while maintaining high expectations is the basis for classroom management as well as creating a truly educational classroom. [This teacher] did this by keeping classroom standards high, but also clear, consistent, and obtainable. He also placed responsibility evenly between himself and the students and allowed for some flexibility rather than overmanaging the class."

Even though many students were able to recognize applications of important and complex issues (e.g., racism and discrimination) or address

sophisticated concepts (e.g., epistemological beliefs), students at this stage rarely extended their comments to further application, interpretation, or evaluation, or addressed their own vision or beliefs about teaching. For example, a student who accurately recognized that a teacher was "employing extrinsic reinforcement to motivate her students by handing out stickers at the end of class and rewarding her students for enthusiastic participation" did not go further to assess the value of this practice or address its implications for teaching. Often these surface comments left the student's depth of understanding unclear.

Use of knowledge (application, warranting, critique, and creativity). Further understanding developed by many participants was illustrated by the ways they used course knowledge to support their understanding of teaching scenarios or to develop their vision for teaching. For example, many students were able to use theory and research to interpret or more thoroughly explain their observations.

"Having each word addressed several times in multiple contexts allowed for a greater possibility of recalling the word and integrating it with the individual's existing vocabulary, transferring the classroom use of the word into functional use" (Ormrod, 2008, p. 277)

or

"Ormrod (2008) writes that one of Maslow's hierarchy of needs is to have affectionate relationships with others and to be accepted as part of a group. When this basic need is lacking (say for example this child's guardian who was not around), the child will seek relatedness with a group somewhere else...Perhaps this

sixteen year old boy turned to drugs and its “family” community as a means to fill his void of family relationships.”

Participants also demonstrated the ability to recognize implications of educational psychology within teacher strategies. For example, one student made this distinction:

“The teacher was motivating her students with candy, extracredit points, and a fun review game. All of these things are types of extrinsic motivation, since the students were motivated to learn by what external rewards they would get out of it, not necessarily by the satisfaction of learning and expanding their knowledge.”

Such insights also enabled some to critique the effectiveness of the teaching strategies they observed, using theory as their frame of reference. For example:

“Mr. Shelton showed me a cool demonstration before school started that he was saving for his “good” classes. I could not help but think that such an interesting demonstration could do nothing but incite further curiosity in the class that lacks the most.”

Many were able to differentiate why certain applications of theory were appropriate or inappropriate for the particular situation, as in, “I would focus more on elaboration with younger children.”

Participants were also observed justifying or warranting their positions using the principles of educational psychology. For example, one student justified her new insights about the classroom environment this way:

“I learned that inappropriate behavior is not just something that you punish

and then move on, because it will continue to occur. It is something that needs to be researched and found ‘why’ and then the behavior can be changed with help from peers and teacher.”

Another explained:

“I was happy that the class was structured so that the children from both the English- and Spanish-speaking families were in the same class...This aided the ESL students a great deal by allowing them to learn English without ignoring their existing knowledge in Spanish and allowing them to explain themselves fully since they were allowed to use both their knowledge of English and Spanish. “

Others drew on explicit theories for such critiques, as in:

“In this classroom, the students were not given any chance to interact with each other, which inhibits their social and cognitive development. Both the theories of Piaget and Vygotsky value interactions for cognitive and social growth. Vygotsky emphasizes the interaction of children with adults for cognitive and social development (Ormrod, 2008, p. 39). Piaget believed that “interactions with one’s physical and social environment are essential for cognitive development” (Ormrod, 2008, p. 70). I feel like the lack of student-teacher and student-student interactions is partly to blame for the consistent behavioral problems (lack of social development).”

In addition to critiquing what they saw in the field experiences, the participants used their new knowledge of educational psychology provided class members with the ability to suggest original (sometimes

innovative) strategies or solutions, such as:

"The problems on the review slides and practice test required little more than basic algorithms... I understand that it may be hard to require critical thinking on problems when students are just encountering a subject, but I think that the students in the classroom would benefit from having to tackle some harder problems. This can also help them to realize that knowledge is not fixed, and develop creativity and critical thinking that can be positively transferred to other circumstances."

Naturally, many students applied these uses of educational psychology in combinations. For example, one combined critique with analysis:

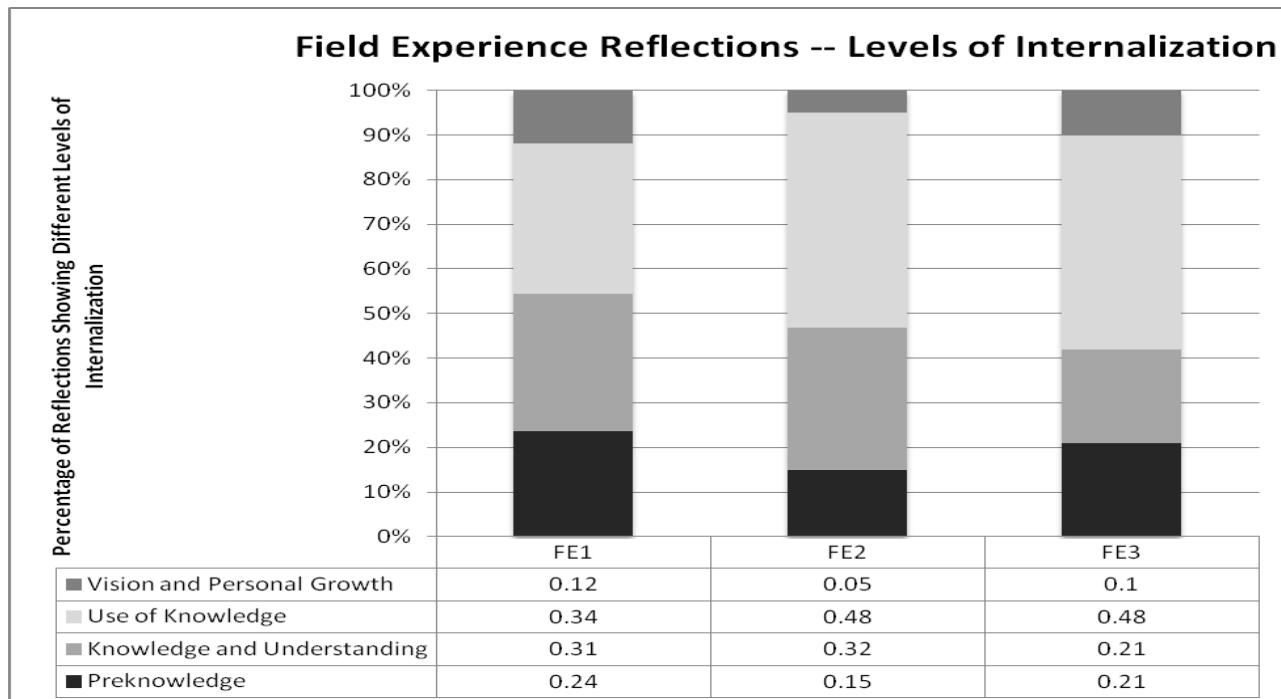
"The most distressing part of this observation was that the students gave no indication they were intrinsically motivated (e.g., motivated from a personal desire) and the teacher made little attempt to intrinsically motivate her classes (e.g., give the students incentive to be excited about learning). The teacher only seemed interested in breezing over the information so that the class would be, at least on paper, caught up. There was no attempt made to justify to the class why they should read a 14th century text and only the slightest connection was made to works read previously. With the aforementioned lack of discussion, the class was further alienated and subjected to a long lecture in which only a few students seemed at all tuned in to the proceedings."

Integration of knowledge into individual belief system. The highest

level of teacher knowledge according to Berliner's (1988) model involves teachers' integration of knowledge into their belief system about teaching. For the purposes of this study, such integration was indicated by four possible occurrences: an increase in the level of participants' reflections (regarding insights from educational psychology) across the semester; student comments regarding their growing understanding of educational psychology; change in students' vision of teaching from the beginning to the end of the semester indicating more insight from educational psychology; and student claims regarding increasing insights from educational psychology integrated into their vision of teaching.

Increased integration of educational psychology knowledge in reflections. The level of internalization of educational psychology theories seen in these reflections varied greatly (see Figure 1). In their first field experience report, for example, 24% of study participants just described their experiences without making any in-depth connections to the educational psychology theories other than mentioning some concepts, 31% were able to make the connections to the theories, and another 34% used theories in more insightful ways (application, analysis, critique, or creativity). The majority (55%) of students' first reflection tended to be descriptive. Connections with their own vision or teaching were mentioned by 12% of participants at this point in the semester.

Participants demonstrated development in their levels of reflection of educational psychology across the semester.

Figure 1. Development of Level of Reflection across Three Field Experiences

Comparing their last field experience report with the first, 58% of participants provided reflections that were grounded in educational psychology theory or research and/or reflected on the application of the theories and their experiences to their own teaching and their development as teachers, rather than limiting their insights to knowledge or preknowledge. The two largest changes in proportional size of groups representing the various levels of integration of knowledge occurred at the declarative knowledge (Level 2) and use of knowledge (Level 3) levels (see Figure 1). Across the semester, the proportion of students categorized at the knowledge level changed from 31% to 21%. Over the same time period, the proportion of students classified as accurately and insightfully using their knowledge base grew from 34% to 48%. The proportion of students who described connecting

principles of educational psychology to their own vision or growth as a teacher remained small (12% for Field Experience 1; 5% for Field Experience 2; and 10% for field Experience 3).

Student reports of impact of field experiences on their knowledge of educational psychology.

Given that students participated in many activities relative to educational psychology across the semester (attending class, online reflections, class discussions, course readings, and other assignments), it would be spurious to attribute changes in their integration of the principles of educational psychology to these field experiences alone. Students' comments did, however, explicitly address their perceptions of the impact of these experiences on their learning. Many students were explicit about actual lessons learned, as in:

"These observations were of great value to me as an educator because I have grown very accustomed to watching the use of psychology from other educators. Applying [psychological] tools and methods while working with a group at the same time allowed me to wrap it into my own unique style, which is integral for any educator going out into the real world."

Another student explained that, "By entering the [service learning] setting with the intent to dissect it from an educational psychology point of view, I gained more of an in depth understanding of their use of classroom management and scaffolding than I would have otherwise." A student working with a population of students with which she was unfamiliar reported these insights that might not have been provided by course knowledge alone:

"This was an eye opening experience for me because I have not taken the time to volunteer anywhere that services severe and profound adults. Kristen taught me more than I ever imagined. She taught me that even though she has a disability, she is a real person with real emotions."

Another class member commented:

"Looking back, I was able to apply so many things that we have been talking about to this real-life situation. I was motivated to think outside the box when trying to teach a child how to grasp a certain idea, and I learned how difficult and challenging it can be to teach a concept to a child."

Various students reported on important insights about students. For example:

"For the most part, the class tended to enjoy those types of activities that

allow for more self-discovery. It makes sense if you think about it. I remember when I was young I never thought of myself as actually being young. My thoughts have always had as much importance to me as they do to me now. So maybe the same goes true for wanting to be treated like an adult? It's amazing how much a little bit of freedom can make a world of a difference, and that's exactly what I saw during this field experience."

Others increased their insights as a teacher:

"As I was walking around and thinking about the assignment, I started to notice little things that I had never noticed before, for example, how the educational setting itself affected the lesson and why the teacher used two different lessons to teach the same fundamentals to the kids."

Others reported that reflecting on course knowledge in authentic settings supported their self-efficacy as a teacher in responses such as:

"In a way, the observation gave me some hope in my abilities as a teacher, because I was constantly thinking of ways to improve the lesson using things that we learned in class" or "This experience has not only taught me the differences between teaching entirely different types of students, but it has also reassured me of the value of an arts program." In summary, multiple students reported that, "This experience taught me things that a lecture would not be able to."

Increased insights from educational psychology integrated into teaching visions.

At the beginning of the semester, the teacher visions described by these participants were extremely teacher-centered. Not only was the teacher described as important, major, and central to the learning process, there was an emphasis on teacher authority. The responsibility for classroom learning fell to the teacher. For example, student motivation was described as something teachers *did to* students, rather than an experience that emerged from the learning community.

The chief role of the teacher was centered on the delivery of knowledge. Teachers were described alternately as: “one who *presents information*” (possible in various ways), one who “determines *the manner in which materials are presented*,” one who “makes sure the *material is presented* to each student in an understandable manner” or “*presents material* in a fashion that is accessible to students of all ability levels” or “*provides the students with the information* in ways which they will be able to learn. Teachers were also considered responsible to be organized and prepared.

Another key characteristic of the preliminary vision statements was a deficit perspective regarding students, blaming students for any lack of success in learning. Participants claimed that, “If students are not respectful, no learning will take place.” As well as, “One aspect of students that affects a teacher’s role in successful teaching is if the child is lazy and not willing to cooperate with the teacher’s efforts; some students are very motivated and some may be lazy.” Students were consistently blamed for any lack of learning success:

“If a student walks into a classroom with a closed mind thinking that

school is horrible and is not willing to change their attitude, then they will be correct. Their school year will be horrible, they will not try to make anything fun, and they will not accomplish very much during the school year.”

Therefore, “if the teacher gets taken over by a class full of intolerant, disrespectful children, then nothing is ever going to be accomplished due to constant class disruptions and bad behavior.”

At the end of the semester, participants’ teacher visions were much more multidimensional, with less of a pure emphasis on the delivery of information as the teacher’s role. Moreover, they were much more student-centered and sociocultural in perspective, both of which guided students away from a deficit perspective with regard to their students. In postsemester vision statements, the teachers’ role was described as “more than just standing in front of the classroom and using the rote method to relay information of the subject area. It encompasses planning a course of study so that each student will be involved in the class.” As one student wrote:

“A teacher who merely presents the information and assumes that the student is learning is completely ineffective. They have missed the point. A teacher’s job is to guide the student. They need to be aware of what students already know and support them in their effort to learn new things.”

Another participant elaborated:

“Teachers are ineffective as simply ‘fountains of knowledge’ to pour out among students. Instead, when a teacher provides space, time, and framework, students can learn much

more, and remember it in a very real way. This is demonstrated in Vygotsky's framework: if we as teachers "scaffold" concepts, we use our knowledge to set up a space for students to learn and explore concepts that they may not have been exposed to otherwise, and our knowledge allows us to be a knowledge base (a resource) to them."

According to vision statements written at the end of the course, all teaching should not come from the teacher: "To promote learning, sometimes the teacher has to give the reins to the students and just facilitate. Teachers should ask questions and encourage students to question the material"; "By teaching I now mean having a dialogue with the students, making sure you are not the only one allowed to give an opinion." One student wrote:

"It is just not enough to present information. As teachers, we should inspire our students. We need to be the bridge from assimilation to accommodation. We cannot just throw facts at them, but give them the way to apply the information in the real world. Through our passion for knowledge, we can motivate and engage them in the material. We can find interesting ways of presenting material, adapting our teaching skills for the ever-changing world."

Another student described it this way:

"The teacher's role is to *be there*. When I say *be there* I don't mean to show up, I mean to *be there* in every sense of the word—to bring the full emotional passion of their love for their profession to the classroom every day. More than explaining the information to our students we need to make it accessible and engaging to

make their learning experience more organic and natural. The better the job we do facilitating the learning experience, the more learning becomes a reflex instead of a task and the more the student's education acquires depth as he or she reinforces their own education by seeking deeper answers to their questions."

This new framework for understanding the role of teachers suggested a much more student-centered, rather than teacher-centered, learning environment. This perspective was captured in such statements as:

"Students' success will be determined by not just how much they got from the class, but how much they gave as well"; "You can learn as much from your students as they can from you"; and "Truly reaching students is an extremely difficult task and a big part of it starts with them realizing that you value their thoughts and the unique way the course material affects them."

Student autonomy was a major focus of these vision statements as captured in comments such as

"We need to allow the students to lead the conversation." Participants also claimed that: "Teachers must make sure that students feel that they are able to make decisions as far as what and how they are learning. Students who feel they have a choice in something as simple as the books they read will be happier in the classroom," and "Allowing students to direct some of their own learning and using authentic activities to help students make connections to real-world situations can help get students involved in learning."

This student-centered approach generated a focus on the importance of students' cultures and social backgrounds as a key to their connection to learning that was addressed in most postsemester vision statements. The kinds of knowledge students brought with them from their cultural and community backgrounds was recognized as central to their learning: "Students and teachers all come into the classroom with different backgrounds and notions about how school works." The starker evidence of this new perspective was the complete absence of a deficit perspective or blaming of students for failures in the postcourse vision statements. For example:

"If a student has the tendency to fall asleep in the class, knowing the student comes from a troubled background and gets little sleep will help the teacher to make more objective decisions about the student—rather than jumping to a hasty decision that the student is lazy."

or

"We cannot simply label a child as lazy and use that as an excuse for the reason they are not doing well."

or

"A lot of classes have what some teachers have called "bad apples," but I would like to call them "apple seeds" because an apple seed has to grow and it needs the right things to grow to make an apple tree."

Student reports of the impact of participatory activities on development of teacher vision.

As was the case with the change in students' internalization and use of principles of educational psychology

relative to teaching practice, it is important to not merely assume that class experiences were the catalyst for the development of teacher visions among these teacher candidates. Participants did, however, articulate their perceptions of the impact of these experiences. Many participants provided evidence of changes in beliefs or understandings about students and learning, particularly working with students from low-income families. Comments included:

"As I drove through the 'bad' side of town I found myself making some assumptions about those kids," "I was shocked at how little I knew about the minority communities that fed into this tutoring center," and "I was overwhelmed by the sheer number of students at the center."

Frequently these insights would not have been obvious without exposure to the sites drawn on for these specific learning experiences. Consider for example the realization afforded for this student—that the typical course experience would not have provided:

"I was completely unaware of the extent of the refugee population in [this community], especially that of the Montagnard population of central Vietnam. Apparently [this community] is home to the largest population of Montagnards outside of Vietnam and the center tutors a large group of young Montagnards as well as a significant number of Liberian refugees."

Once again, several students anchored many of the lessons they learned directly in educational psychology theory and research. A rich example of this growth is articulated in this reflection:

"First off, Vygotsky's theory of the sociocultural perspective has become very influential in my personal philosophies of teaching; for example, "through both informal conversations and formal schooling, adults convey to children the ways in which their culture interprets and responds to the world." (Ormrod, 2008, p. 39-40). Even though we were working on a topic as universal as math, cultural ways of thinking of math were the ideas that I was teaching him. I have come to realize that even the wording of elementary books set up teaching cultural values".

Another student reported incorporating lessons from Vygotsky as he worked specifically with struggling students in a tutoring center:

"I have come to agree with great conviction in the zone of proximal development. Even though this did not occur in my tutoring of these students, I believe the level of potential development is important to push even struggling children to. My own style of working with Vygotsky's theories will include pushing until I have challenged all students to do "tasks that a child cannot accomplish without considerable assistance and support" (Ormrod, 2008, p. 39-40). By taking them farther than they can possibly perform on their own, I will be able to clearly see the line marking the level of potential development and know how to make them work at the top of their abilities."

*Post Hoc Between Group Analysis
Comparing Students Engaging in
Observation vs. Participation.*

Only 33% of students actually engaged in genuine service learning activities. This distinction created two groups of students: those that primarily engaged in observation and those whose field experiences approximated service learning by virtue of being participatory in nature, responding to needs identified by the community (e.g., established tutoring programs that had been requested by a community or school) and incorporating reflection. The relative integration of educational psychology knowledge (focusing on the first three levels of our model) between these two groups was therefore examined. Although both groups demonstrated increased integration of knowledge, the profile differed between the two groups (see Figure 2). Students who participated in pure observation did increase the proportion that used higher-level application of educational psychology (from 19% to 43% across the semester). However, the change was more distinct for the students that conducted participant observation as opposed to pure observation: The proportion of these students at the preknowledge level decreased from 31% to 18% to 6%; declarative knowledge decreased from 44% to 25% to 19%. Within the participant observation group, the proportion of students effectively applying principles of educational psychology grew from 19% to 56% to 67% across the three reflections.

Discussion

A rapidly expanding knowledge base, an educational culture driven by standardization, and the considerable and growing diversity of today's school populations are among the many pressures that make teaching effectively in contemporary American schools a

formidable challenge. The work of teacher educators attempting to provide preservice teachers with experiences designed to transfer the knowledge learned in coursework to the day-to-day practice of teaching presents a universal challenge. Coursework in educational psychology offers crucial insight into the very issues that can make teachers more successful (diversity, motivation, assessment, learning theory, etc.). However, its knowledge base is useless without effective translation from theory to practice. Both the theory of situated learning (Lave & Wenger, 1991) and practice/activity theory (Holland et al., 1998) suggest that the skill and agency necessary to teach insightfully, reflectively, and adaptively can only be learned through active participation in a community of practice. Results from this exploratory study suggest that community- or school-based experiences, especially those modeled after insights from service learning, have much to offer educators attempting to support this growth among teacher candidates. Such experiences provide opportunities for future teachers to recognize the forces that impact students in ways that can powerfully inform the teacher's assumptions and practices (Bolye-Baise et al., 2007).

Students in the courses represented in this study in general made progress from reflections characterized primarily by descriptions that were uninformed by educational psychology and accurately identifying examples of educational psychology theory, to using such theory creatively and insightfully. Specifically, many students (67% of those who participated in field experiences patterned after service learning) progressed to the point that they were able to accurately identify the

implications of psychological and educational events, critique their observations, warrant their own positions, and suggest strategies that harnessed insights from educational psychology more powerfully. A small group of students also reported new insights relative to their personal vision or beliefs about teaching, which is considered the most sophisticated and empowering level of teacher knowledge.

More students made progress in the integration of educational psychology principles when participating primarily in service-learning-type activities than when participating primarily in pure observation (such as is typical in the traditional teacher-education internship.) This finding is in keeping with the tenets of situated learning (Lave & Wenger, 1991) or practice/activity theory (Holland et al., 1998) that suggests that *legitimate participation* as members of a learning community, including access to genuine responsibilities (rather than mere observation), is required for individuals to come to see themselves as legitimate contributors to that process and to develop an identity integrating relevant community knowledge.

The results of this study suggest important insights regarding the optimal design, the essential nature, and the potential impact of the practice-based components of teacher education courses. Legitimate participation, including genuine responsibility for a student's success in learning, situated amidst the authentic, and therefore often challenging, circumstances that characterize the real lives of today's students, is clearly conducive to a preservice teacher's ability to examine their preconceived notions, understand and skillfully use course knowledge, and

develop a vision for teaching that is insightfully shaped by educational psychology. It is not sufficient for students to engage in the typical observation internship that are so common among teacher-education programs. Integration of the principles of educational psychology proceeded at a much slower pace for students in this study who engaged primarily in observation exercises. Nor is it sufficient to wait until the end of coursework and confine classroom-based experiences to a one-shot, student-teaching experience. It was only after reflecting on such experiences multiple times that a pattern of consistent insights from educational psychology began to emerge. Therefore, including *a sequence of participatory experiences/reflections*, running parallel with coursework, seemed to serve these students well. The group of students employing the principles of educational psychology most skillfully and consistently (as opposed to merely recognizing or naming them) in their work with students, or their interpretation of student learning, occurred among students who engaged in participatory experiences (including elements of a service-learning model), but not until the third such experience in this course. In summary, the highest level of integration of the principles of educational psychology into students' actual teaching practice, as well as their vision of teaching, appears to require consistent, parallel, participatory, authentic challenges offered by involvement in the real needs of students, coupled with focused reflection on the implications and applications of course knowledge to that challenge. Indeed, experiences such as those designed into this study appear to provide a fertile, and possibly essential,

ground for the integration of the knowledge base of educational psychology into the understanding, practice and teaching vision of preservice teachers.

Another consideration regarding interpreting the results of this study involves the small number of students who included claims that addressed their vision of teaching (the highest level of Berliner's [1988] model of teacher knowledge) in their field experience reflections. It should be noted that although direct references to teacher vision may be small in number in student reflections, development of such teacher vision to include more insights from educational psychology was readily evidenced in students' written vision statements. Students' statements of their vision for teaching changed drastically from being primarily teacher-centered and reflecting a deficit perspective regarding students at the beginning of the course to a much more student-centered perspective with no evidence of a deficit perspective regarding students at the end of the semester; several students attributed this growth to the participatory observations required by this course. Moreover, it should be noted that integration of educational psychology principles into one's belief system could occur simultaneously with the first three levels of our model (preknowledge, declarative knowledge, and use of knowledge). Hence, belief-system growth might have actually been more prevalent than indicated by the number of student claims coded purely at Level 4.

It is unfortunate (and a limitation of this study) that so few students followed course guidelines and engaged in three authentic service-learning experiences. These two sections of the

course were accustomed to interpreting field experiences in their teacher-education program to mean observation. It is possible therefore that the prevalence of observatory field experiences programs caused students to gravitate away from actual service-learning in favor of the familiar observation model. Despite consistent instructor clarification, this remained a chronic problem across the semester. An important next step in research harnessing these principles is to align student field opportunities more explicitly with the tenets of authentic service-learning and more effectively scaffold students' engagement in such experiences.

One important caution relative to this study is its exploratory nature. There were many intervening variables during the semester that were not controlled. For these reasons, results must be interpreted with caution, and it would be erroneous to assume a causal relationship between service-learning-style experiences for teacher candidates and their growth in either internalization of the principles of educational psychology or the development of their teacher vision. It is enlightening though, that in the minds of these students, as evidenced by their self-reports, these experiences did have a key bearing on the growth across the semester, beyond what they could have learned in class, in their internalization of educational psychology principles and growth in their vision of what it means to be a teacher. Given the challenges inherent in, and the importance of, teacher development, coupled with the patterns suggested by the results of this study, further examination of these issues in more controlled studies is clearly called for.

This study was designed to provide insight into how best to support the understanding and application of educational psychology to the teaching decisions of teacher-education candidates. As such, it makes an important contribution to efforts to prepare teacher candidates to make informed decisions regarding teaching practice based specifically on insights from educational psychology course work. In addition, it provides important insight into the potential of legitimate participation in responsibility for student learning as a catalyst for helping teacher candidates translate teacher knowledge into practice.

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